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10/036,663	11/01/2001	Debargha Mukherjee	10005065-1	3728

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EXAMINER

CHEN, WENPENG

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 12/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/036,663	Applicant(s) MUKHERJEE ET AL.	
	Examiner Wenpeng Chen	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 9-13, 18 is/are rejected.
- 7) ☒ Claim(s) 5-8 and 14-17 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Adar et al. (US patent 5,699,457.)

Adar teaches a compression method comprising:

-- regulating compression of serialized input data as a function of an in-progress measure of said compression; (column 9, lines 22-63; REM is an in-progress measure of compression.)

-- wherein said function is greedy with respect to a target block size. (column 9, lines 22-63; The equation in column 9, lines 14-17 shows that total REM is added to make the block bit

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allocation for the next block. Without explicitly specifying the meaning of "greedy", the examiner considers that the function is greedy trying to use all the REM.)

3. Claims 1-4 and 9-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Sugahara et al. (US patent 6,084,636.)

Sugahara teaches a compression method comprising:

-- regulating compression of serialized input data as a function of an in-progress measure of said compression; (column 10, lines 5-58; The difference (Bits(j-1)-TGT(j-1)) is an in-progress measure of compression.)

-- a) converting a source image into a series of blocks, said series including a first block, intermediate blocks, and a last block; (column 5, lines 9-28; column 6, lines 27-55; In MPEG, a frame is divided into blocks having a first block, intermediate blocks, and a last block.)

-- wherein, said regulating includes

- b) determining a baseline target block size; (column 10, lines 5-58; The quantity $d(0)$ is a baseline target block size.)

- c) for each block in turn, determining a current target block size, the current target block size for said first block being said baseline target block size, the current target block size for said intermediate blocks and said last blocks being equal to said current baseline target block size plus an accumulating savings associated with the preceding block in said series; (column 10, lines 5-58; The $d(j)$ is a current target block size.)

- d) for each block in turn, selecting a compression mode guaranteed to compress that block so that the resulting compressed block fits its corresponding target block size as

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determined in step c, wherein step d involves analyzing the content of the block and selecting said compression mode in part as a function of results of that analysis; (column 10, lines 5-58; Equation 8 sets a quantization factor for block j . A different quantization factor corresponds to a different compression mode guaranteed to compress that block so that the resulting compressed block fits $d(j)$. The actual encoded data $\text{Bits}(j-1)$ includes the $j-1$ block data that is analyzed.)

- e) for each block in turn, compress the block using the compression mode selected in step d to yield a corresponding compressed block; (column 10, line 58 to column 11, line 5; The quantization factor $Q(j)$ is used to quantize transform coefficients -- a compressing step.)

- f) for each of said first and intermediate blocks in turn, determine said accumulated savings in part as a function of the size of the compressed block resulting from step e, wherein step f involves determining the size of the compressed block resulting from step e and determining said savings in part as a function of said size; (column 10, lines 5-58; The total difference $(\text{Bits}(j-1) - \text{TGT}(j-1))$ represents the accumulated savings.)

-- wherein said source image is a compound document; (column 5, lines 9-28; A video is a document that contains many frames with each frame having various objects. Thus a video is a compound document.)

-- wherein said function is greedy with respect to a target block size. (column 10, lines 5-58; The equation $d(j)$ shows that total difference $(\text{Bits}(j-1) - \text{TGT}(j-1))$ is added to $d(0)$ to make $d(j)$. Without explicitly specifying the meaning of "greedy", the examiner considers that the function $d(j)$ is greedy trying to use all the difference.)

Adar teaches an image compression system comprising:

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-- an encoder for sequentially compressing a series of source-image blocks, said encoder implementing plural compression modes with respective predetermined maximum compressed block sizes; (Figs. 2 and 5; column 10, lines 5-58; column 5, lines 9-28; column 6, lines 27-55; In MPEG, a frame is divided into blocks. The equation $d(j)$ shows that total difference $(\text{Bits}(j-1) - \text{TGT}(j-1))$ is added to $d(0)$ to make $d(j)$ that represent respective predetermined maximum compressed block sizes.)

-- a mode selector coupled to said encoder for selecting one of said compression modes for compressing a given one of said source-image blocks, said mode selector selecting one of said compression modes at least in part as a function of a target block size for a current source-image block, wherein said mode selector selects a compression mode for a current image block in part as a function of its content; (Figs. 2 and 5; column 10, lines 5-58; Equation 8 set a quantization factor for block j . A different quantization factor corresponds to a different compression mode guaranteed to compress that block so that the resulting compressed block fits $d(j)$. The actual encoded data $\text{Bits}(j-1)$ includes the $j-1$ block data that is the content.)

-- an evaluator for determining the target block size for each of said source-image blocks, wherein said evaluator includes a block-size reader for determining the block size of a compressed block resulting from compressing of a respective source-image block, said evaluator determining said target block size in part as a function of the size of said compressed block. (column 10, lines 5-58; The $d(j)$ is a current target block size.)

4. Claim 18 is rejected under 35 U.S.C. 102(e) as being anticipated by Yada (US patent 6,320,981.)

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Yada teaches an image decompression method comprising:

-- receiving compressed block image data in which some but not all image blocks have been encoded block-truncation coding; (Fig. 6; column 15, lines 25-50, 53-58)

-- for each block, determining from the block data whether or not it has been encoded using block-truncation coding; (Fig. 6; column 15, lines 25-50, 53-64)

-- in the event that a block has been encoded using block-truncation coding, decoding said block using a block-truncation decoding algorithm; (Fig. 6; column 15, lines 25-50, 53-64; column 16, lines 1-3)

-- in the event that a block has not been encoded using block-truncation coding, not decoding said block using a block-truncation decoding algorithm. (Fig. 6; column 15, lines 25-50, 53-68)

Allowable Subject Matter

5. Claims 5-8 and 14-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to teach the method of Claim 5 and the system of Claim 14 which specifically comprise the following features in combination with other limitations:

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-- selecting from mode families, said mode families including an n-color mode family including lossless n-color compression modes, and a BTC-VQ mode family including lossy BTC-VQ compression modes.

Conclusion

6. The prior art made of record in form PTO-892 and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wenpeng Chen whose telephone number is 703 306-2796. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on 703 308-7452. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications. TC 2600's customer service number is 703-306-0377.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.

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Wenpeng Chen
Primary Examiner
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December 1, 2004

A handwritten signature in black ink, appearing to read 'Wenpeng Chen', with a long horizontal flourish extending to the right.